



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: BR700-710A2-20 BYPASS RATIO: 4.2  
 UNIQUE ID NUMBER: 4BR009 PRESSURE RATIO ( $\pi_{00}$ ): 24.2  
 COMBUSTOR:  
 ENGINE TYPE: MTF RATED THRUST ( $F_{00}$ ) (kN): 65.6

REGULATORY DATA **\*\* DATA SUPERSEDED \*\*** SEE FOLLOWING UID FOR REVISED DATA: **01P04BR013**

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	3.8	79.6	49.3	18.0
AS % OF ORIGINAL LIMIT	19.2	67.4	55.8	67.6
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			69.7	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			78.7	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			84.6	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			96.0	

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 - OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	0.714	0.02	1.04	18.73	14.0
CLIMB OUT	85	2.2	0.595	0.02	0.93	15.03	11.9
APPROACH	30	4.0	0.214	0.05	4.81	7.67	0.3
IDLE	7	26.0	0.089	1.12	28.00	4.67	0.6
LTO TOTAL FUEL (kg) or EMISSIONS (g)			299	160	4239	2784	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				2.4	64.8	42.5	14.0
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				2.19-2.7	64.31-65.59	41.81-42.91	12.6-15.15

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	100.9-101.2
TEMPERATURE (K)	282.9-286.7
ABS HUMIDITY (kg/kg)	0.0064-0.0087

### FUEL

SPEC	AVTUR
H/C	1.89-1.92
AROM (%)	16.4-18

MANUFACTURER: Rolls-Royce Deutschland  
 TEST ORGANIZATION: BMW Rolls-Royce GmbH  
 TEST LOCATION: Dahlewitz  
 TEST DATES: 19/10/1996-20/10/1996

### NO<sub>x</sub> REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

### REMARKS

1. Data from Certification report E-TR853/96-(FR) ISS01.
2. For Canadair Global Express application
3. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
4. NO<sub>x</sub> levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

Compliance with Fuel Venting requirements: -

('x' if complies, 'PR' if pre-regulation, '-' if information is not available)